

## **COOLING FAN**

### **FIELD OF THE INVENTION**

The present invention relates to a cooling fan, and more  
5 specifically, to a cooling fan drawing electrical power from the  
computer to turn on the fan for cooling purpose.

### **BACKGROUND OF THE INVENTION**

Since the computer related peripherals have been continuously  
10 researched and innovated, the connections between computer  
peripherals and the host becomes closer and much frequent and more  
complicated. Fortunately, the computer makers provide such as  
Universal Serial Bus (USB), IEEE1394 (6-line), or PS2, connectors  
and connector outlets to solve in time for the connection issue.

15 The general connecting system of USB, 1394 and PS2 has 4  
lines or 6 lines. Among these lines, there are 2 lines or 4 lines are  
signal lines for data transport and the other two lines are power lines  
for low voltage supply (about 5V) and low current supply (500mA).  
Therefore, these USB, 1394 and PS2 or connectors are used to the  
20 medium for functioning with both data transport and power supply,  
and have been equipped within the computer, notebook and hub to  
provide the user for convenient connections and data transfer.

The well-known most benefit of the USB, 1394 and PS2 hub is  
to connect the peripherals by the bus or collecting nodes and then  
25 connects to the computer or to the outlets of the USB, 1394 and PS2

on the host.

As described above of the USB, 1394 and PS2, their HUB connectors and outlets comprise two power lines for supplying low voltage and low current. Accordingly, the inventor herein adapts  
5 this property and investigates the necessity of connecting apparatus of the USB, 1394 and PS2 connectors for the computer peripherals so as to draw the electrical power from the USB, 1394 and PS2 of the computer by the computer operator to get a convenient electrical power for a mini cool fan.

10 The structure of the present invention has a fan set inside the cool fan case and a speed tuner lid on the top. Its power line ends have the plugs of the USB, 1394 and PS2 to connect to mobile computer, arbitrary outlets of the HUB of computer host, the USB, 1394 or PS2 in order to draw electrical power from the USB and 1394  
15 to turn on the fan for cooling purpose.

The embodiment of the present invention, besides of the cool fan function, is capable of having a recess on its basis for the placement of card reader, hub, hard disk or radio device and also having the pen stand for the user to put the pen or electrical pen for  
20 writing and pointing to increase its usage.

## **SUMMARY OF THE INVENTION**

The present invention provides a mini cool fan capable of connecting to any outlets of the USB, 1394 and PS2, characterized in  
25 that there is a fan inside the cool fan case. Its power line ends

have the plugs of the USB, 1394 and PS2 to connect to arbitrary outlets of mobile computer, computer host, or the hub of the USB, 1394 and PS2 in order to draw electrical power to turn on the fan for cooling purpose. The embodiment of the present invention is  
5 capable of having a recess on its basis for the placement of card reader, hub, hard disk or radio device to increase its usage.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a perspective view of a cooling fan of the invention;

10 FIG. 2 is an exploded perspective view of a cooling fan of the invention;

FIG. 3 is an illustrative diagram of a cooling fan of the invention additionally with card reader, hub, hard disk, or radio device.

#### **15 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Referring to FIG. 1 and FIG. 2, the present invented cool fan (1) includes a basis (11), a front shell (12), a rear shell (13), a fan set (14), a speed tuner (15), a power signal line (16) and a connecting plug (17).

20 The basis (11) has an adjustable positioning hole (111), a positioning reed (112) on the bottom and a pen stand (113) on the side.

There fixed a fan set (14) on the center inside the front shell (12) and has a blowing net (121) on the front rim, also there is a half  
25 circle thread of a screw (122) on the bottom of the front shell (12),

and there is a inlet (131) on the back of the rear shell (13), its inner proper position places screw threads (132), (133) and a half circle screw thread (134).

5       The PCB (141) board of a controlled fan set (14) is fixed by a screw (142) on the screw thread (132) of the rear shell (13). After binding both the front shell (12) and rear shell (13) by a screw (135) being screwing into a ball shape, the PCB board (141) connecting to a signal line (16) draws out from the back of the rear shell (13) and having connecting plug (17) on its line end.

10       The basis (11) described above uses a screw (114) screwing through the positioning reed (112) and into the half circle screw threads (122) and (134) on the bottom of both the front shell (12) and the rear shell (13) to form a ball-shaped combination. The elevation angle of the cool fan (1) is adjustable by the positioning  
15       reed (112) and there covers a bottom board (115) on the basis (11) bottom.

      The contact top of the front shell (12) and the rear shell (13) described above has holes (123) and (136) to fix the position of rotating speed tuner, and there is an arc knob (151) placed on the top  
20       for the user to adjust and control rotating speed of the fan (14). The fan (14) is capable of with light (the current fan suppliers provide fans with light), or additionally places an LED light (137) inside the front shell (12) to have a lighting effect for the front shell (13) of the present invention while turn-on the cool fan (14). Accordingly, the  
25       present invented cool fan (1) is to use the USB, 1394 and PS2 plugs

(17) connecting to the outlets of the computer or hub to offer the cool fan (1) for work. The lighting appearance from the fan (14) has technical and secret feel, also the arc knob (151) can adjust rotating speed of the fan (14).

5 AS FIG. 2 shown, the present invented cool fan (1) places a recess (116) on the bottom of front side of the basis (11) to support individual card reader (1A), HUB (1B), hard disk (1C) or radio device (1D), and meanwhile, the apparatus additionally has a signal line (18) and plug (19) for connecting to the computer in order to  
10 increase its function and flexibility.

The connecting plug (17) and plug (19) described above can be the connecting terminal of the USB, 1394 and PS2.